UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/828,681	04/09/2001	Rusty Shawn Lee		6786

7590	05/04/2006		

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EXAMINER
STEVENS, THOMAS H

ART UNIT	PAPER NUMBER
2123	

DATE MAILED: 05/04/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	09/828,681	LEE, RUSTY SHAWN
	Examiner	Art Unit
	Thomas H. Stevens	2123

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>4</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>*02/01/2006*</u>.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-28* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-28* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

1.   Claims 1-28 were examined.

Section I: Final Action (4th Office Action)

Claim Rejections - 35 USC § 112

2.   The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3.   Claims 1-20 are rejected under 35 U.S.C. 112, first paragraph, as failing to

comply with the written description requirement. The claims contains subject matter

which was not described in the specification in such a way as to reasonably convey to

one skilled in the relevant art that the inventor, at the time the application was filed, had

possession of the claimed invention. The specification is, verbatim, silent to the

following new limitations: "at least one new sequence" (claim 1); and "single sequence

of computer-generated", " a subportion" (claim 21).

Claim Rejections - 35 USC § 102

4.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5.   Claims 1-20 are rejected under 35 U.S.C. 102(b) as being anticipated by

Bierbaum et al. "Software Tools for Virtual Reality Application Development" (1998);

(hereafter Bierbaum). Bierbaum discloses a discussion of features to look for when

choosing a development environment for virtual reality applications (abstract).

Claim 1. A method executed by a mechanical, electronic or computer system for

generating machine control instructions (pg.3-24, 2nd paragraph with boxed software

code), said method comprising the steps of: reading in a user input to select an object

library (pg.3-9, Extensibility) of objects, wherein the objects include one or more sets of

machine control instructions (pg.3-24, 2nd paragraph with boxed software code) for

performing one or more functions; connecting the selected object to a network (pg.3-20,

Description, 2nd paragraph; pg.3-25, High-Level Scripting Interface) of objects which

includes objects previously selected and connected by the user: said connecting step

comprising identifying the inputs and outputs of the object selected in said reading step

and connecting such inputs and outputs to inputs and outputs of other objects in the

network (pg.3-20, Description, 2nd paragraph; pg.3-25, High-Level Scripting Interface);

said connecting step resulting in the formation of an aggregate comprising the network

(pg.3-20, Description, 2nd paragraph; pg.3-25, High-Level Scripting Interface) of objects

and the connections between connected objects; generating at least one new sequence

(pg. 3-15, 3rd paragraph, lines 8-9, "single-threaded sequential application") machine

control instructions (pg.3-24, 2nd paragraph with boxed software code), wherein each

said sequence generated is produced from multiple connected objects (pg.3-35, 4th-5th

paragraphs "all objects have properties that accessed through a common interface"...

"the source of a motion link can be a sensor or a path") in the network (pg.3-20,

Description, 2nd paragraph; pg.3-25, High-Level Scripting Interface) of objects;

responsive to said generating step, effecting updates (pg.3-20, Description section, 3rd

paragraph) within the aggregate of the network (pg.3-20, Description, 2nd paragraph;

pg.3-25, High-Level Scripting Interface) of objects and the connections between

connected objects to accurately reflect any changes made to the machine control

instructions (pg.3-24, 2nd paragraph with boxed software code) generated in said

generating step.

Claim 2. The method of claim 1, wherein said generating step and said step of effecting

updates (pg.3-20, Description section, 3rd paragraph) are deferred until the executed

has completed constructing an entire network (pg.3-20, Description, 2nd paragraph;

pg.3-25, High-Level Scripting Interface) of objects.

Claim 3. The method of claim 1, wherein the functions contained in the objects are used

to generate the corresponding sets of instructions (pg.3-24, 2nd paragraph with boxed

software code) for inclusion in the generated machine control instructions (pg.3-24, 2nd

paragraph with boxed software code).

Claim 4. The method of claim 1, wherein the generated machine control instruction

included computer instructions (pg.3-24, 2nd paragraph with boxed software code) to

load the code libraries represented by the objects.

Claim 5. The method of claim 1, wherein the user is a computer program (pg.3-8, API's and Languages).

Claim 6. The method of claim 1, wherein the machine control instructions (pg.3-24, 2nd paragraph with boxed software code) are computer instructions (pg.3-24, 2nd paragraph with boxed software code) belonging to an instruction set architecture.

Claim 7. The method of claim 1, wherein the machine control instructions (pg.3-24, 2nd paragraph with boxed software code) include source code in a computer programming (pg.3-8, API's and Languages) or scripting language.

Claim 8. The method of claim 1, further comprising the step of translating or compiling the machine control instructions (pg.3-24, 2nd paragraph with boxed software code) into another format (pg.3-10, last paragraph) of machine control instructions (pg.3-24, 2nd paragraph with boxed software code).

Claim 9. The method of claim 1, wherein the library (pg.3-9, Extensibility) of objects includes primitive operators for mathematical operations (pg. 3-7, High-Level Low-Level Interface).

Claim 10. The method of claim 1, wherein the library (pg.3-9, Extensibility) of objects

includes container of objects that container other objects (pg.3-25, High-Level Scripting

Interface) or data.

Claim 11. The method of claim 1, wherein the user input is generated by the

manipulation of graphical depictions of objects on a computer or video display screen or

monitor, said manipulation being controlled by a computer mouse or a keyboard or

some combination of a computer mouse and keyboard (pg. 3-10, Supported VR

Hardware).

Claim 12. The method of claim 1, wherein the user inputs (pg.3-20, Description section,

3rd paragraph) include the manipulation in physical space of virtual (title and

Introduction) representations of the objects, provided by a virtual (title and Introduction)

reality system.

Claim 13. The method of claim 12, wherein the virtual (title and Introduction) reality

system includes a force-feedback or haptic interface (pg.3-2 to 3-3, Introduction, 2nd

paragraph; pg.3-5, 1st paragraph).

Claim 14. The method of claim 1, wherein the user input includes movement and

connection of physical objects in physical space corresponding to objects in the library

(pg.3-9, Extensibility).

Claim 15. The method of claim 1, further comprising of the step of removing any number

of objects (pg.3-18, 3rd paragraph) from the network (pg.3-20, Description, 2nd

paragraph; pg.3-25, High-Level Scripting Interface) in response to user inputs (pg.3-20,

Description section, 3rd paragraph).

Claim 16. The method of claim 1, further comprising of the step of modifying existing

connections of objects in the network (pg.3-20, Description, 2nd paragraph; pg.3-25,

High-Level Scripting Interface) in response to user inputs (pg.3-20, Description section,

3rd paragraph).

Claim 17. The method of claim 1, further comprising of the step of monitoring or tracing

(equivocates tracing and tracking; pg.-21, 1st paragraph) the path of data flow and

execution of the generated code by visually indicating activity in active objects in the

network (pg.3-20, Description, 2nd paragraph; pg.3-25, High-Level Scripting Interface).

Claim 18. The method of claim 1, wherein the user inputs (pg.3-20, Description section,

3rd paragraph) are provided by at least one user over a network (pg.3-20, Description,

2nd paragraph; pg.3-25, High-Level Scripting Interface) connection.

Claim 19. The method of claim 1, wherein said step of effecting updates (pg.3-20,

Description section, 3rd paragraph) comprises updating the network (pg.3-20,

Description, 2nd paragraph; pg.3-25, High-Level Scripting Interface) of objects to reflect

changes made by at least one remote user over a network (pg.3-20, Description, 2nd

paragraph; pg.3-25, High-Level Scripting Interface) connection.

Claim 20. The method of claim 1, further comprising the step of creating at least one

new object of machine control instructions (pg.3-24, 2nd paragraph with boxed software

code) from the generated code.

Claim Rejections - 35 USC § 103

6.   The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining

obviousness under 35 U.S.C. 103(a) are summarized as follows:

1.   Determining the scope and contents of the prior art.

2.   Ascertaining the differences between the prior art and the claims at issue.

3.   Resolving the level of ordinary skill in the pertinent art.

4.   Considering objective evidence present in the application indicating

obviousness or nonobviousness.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

7.   Claims 21-28 are rejected under 35 U.S.C. 103 (a) as being unpatentable over

Bierbaum "Software Tools for Virtual Reality Application Development" (1998) in view of

Budd-T.A., "An APL Compiler for a Vector Processor" 1984. Bierbaum and Budd are

analogous art because they both teach application specific software languages.

Therefore, it would have been obvious to one having ordinary skill in the art at

the time the invention was made to utilize the subportion of Budd in the machine control

instructions of Bierbaum because Budd teaches programs [that] can be developed in

one environment and then moved to the parallel machine after they are completed. This

reduces the amount of computation time spent on the (typically costly) parallel

processor (Budd: pg.310, Conclusions section, lines 2-6).

Claim 21. A method for constructing a high-level object model comprising at least two

connected objects from a single sequence of computer-generated machine control

instructions (Bierbaum: pg.3-24, 2nd paragraph with boxed software code), said method

comprising the steps of: reading in a sequence of computer-generated machine control

instructions (Bierbaum: pg.3-24, 2nd paragraph with boxed software code) for performing

one or more functions; searching a library (Bierbaum: pg.3-9, Extensibility) of objects for

one or more matching objects each configured for generating a subportion (Budd: pg.

299, lines 13-14) the sequence of machine control instructions (Bierbaum: pg.3-24, 2nd

paragraph with boxed software code) so matched to determine the objects connected to

the inputs and outputs of each matching object found in the library (Bierbaum: pg.3-9,

Extensibility) of objects in said searching step: connecting each matching object found

in the library (Bierbaum: pg.3-9, Extensibility) of objects to the other objects in a high-level model built from the reading, searching and parsing steps.

Claim 22. The method of claim 21, wherein the original machine control instructions (Bierbaum: pg.3-24, 2nd paragraph with boxed software code) have been from a source file by a compiler (Bierbaum: pg.3-8, last paragraph).

Claim 23. The method of claim 21, wherein the user is a computer program (Bierbaum: pg.3-8, API's and Languages).

Claim 24. The method of claim 21, further comprising a final step of generating machine control instructions (Bierbaum: pg.3-24, 2nd paragraph with boxed software code) from the high-level model.

Claim 25. The method of claim 24, wherein the format of the newly generated machine control instructions (Bierbaum: pg.3-24, 2nd paragraph with boxed software code) differs from that of the original machine control instructions (Bierbaum: pg.3-24, 2nd paragraph with boxed software code).

Claim 26. The method of claim 21, further comprising of the step of modifying connections of objects in the network (Bierbaum: pg.3-20, Description, 2nd paragraph; pg.3-25, High-Level Scripting Interface) in response to user inputs (Bierbaum: pg.3-20, Description section, 3rd paragraph).

Claim 27. The method of claim 21, further comprising of the step of monitoring or tracing (Bierbaum: equivocates tracing and tracking; pg.-21, 1st paragraph) the path of data flow and execution of the generated code by visually indicating activity in active objects in the network (Bierbaum: pg.3-20, Description, 2nd paragraph; pg.3-25, High-Level Scripting Interface).

Claim 28. The method of claim 21, wherein the user inputs (Bierbaum: pg.3-20, Description section, 3rd paragraph) are provided by at least one user over a network (Bierbaum: pg.3-20, Description, 2nd paragraph; pg.3-25, High-Level Scripting Interface) connection.

Section II: Response to Applicant's Arguments (3rd Office Action)

102(b)

8.   Applicant is thanked for addressing this issue. The amendments to the claims have introduced new matter issues relative to the original disclosure. Nonetheless the Office found little distinction to the original limitations and the amendments for claim 1. Rejection stands.

Furthermore, amendments to claims 21-28 is also considered new matter to which a new ground of rejection is made in view of Bierbaum and Budd.

Conclusion

9.   Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37

CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later

than SIX MONTHS from the date of this final action.

10.   This action is a **final rejection** and is intended to close the prosecution of this

application. Applicant's reply under 37 CFR 1.113 to this action is limited either to an

appeal to the Board of Patent Appeals and Interferences or to an amendment complying

with the requirements set forth below.

If applicant should desire to appeal any rejection made by the examiner, a Notice

of Appeal must be filed within the period for reply identifying the rejected claim or claims

appealed. The Notice of Appeal must be accompanied by the required appeal fee of

$500.00.

If applicant should desire to file an amendment, entry of a proposed amendment

after final rejection cannot be made as a matter of right unless it merely cancels claims

or complies with a formal requirement made earlier. Amendments touching the merits

of the application which otherwise might not be proper may be admitted upon a showing

a good and sufficient reasons why they are necessary and why they were not presented

earlier.

A reply under 37 CFR 1.113 to a final rejection must include the appeal from, or

cancellation of, each rejected claim. The filing of an amendment after final rejection,

whether or not it is entered, does not stop the running of the statutory period for reply to

the final rejection unless the examiner holds the claims to be in condition for allowance.

Accordingly, if a Notice of Appeal has not been filed properly within the period for reply,

or any extension of this period obtained under either 37 CFR 1.136(a) or (b), the

application will become abandoned.

Correspondence Information

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Mr. Tom Stevens whose telephone number is 571-272-

3715, Monday-Friday (8:00 am- 4:30 pm EST).

If attempts to reach the examiner by telephone are unsuccessful, please contact

examiner's supervisor Mr. Paul Rodriguez 571-272-3753. The fax phone number for the

organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for published

applications may be obtained from either Private PAIR or Public PAIR. Status

information for unpublished applications is available through Private PAIR only. For

more information about the PAIR system, see http://pair-direct.uspto.gov.. Answers to

questions regarding access to the Private PAIR system, contact the Electronic Business

Center (EBC) (toll-free (866-217-9197)).

April 21, 2006

TS

Paul L. Rodriguez
_____
Primary Examiner
Art Unit 2125 2123